LEGISLATIVE AUDIT DIVISION

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MEMORANDUM

TO: Legislative Audit Committee Members

FROM: Angie Grove, Deputy Legislative Auditor

DATE: December 2008

CC: Anna Whiting Sorrell, Director, Department of Public Health and Human Services

RE: Performance Audit Follow-up 08SP-37: Characteristics of the Population Served at Montana State Hospital (orig. 06P-03)

ATTACHMENTS: Original Performance Audit Summary
Montana State Hospital Information Management Plan Summary
Montana State Hospital 2008 Information Management Plan

INTRODUCTION

In August 2007, we presented our performance audit of the Characteristics of the Population Served at Montana State Hospital. The audit made one multi-part recommendation to the Department of Public Health and Human Services (department). During the fall of 2008, we began gathering information from the department and Montana State Hospital (MSH) on their progress in implementing the recommendation. This memo summarizes the results of our follow-up work in addition to presenting background information on MSH services and management.

Overview

The audit recommendation focused on improving data collected, analyzed, and reported about the population served at MSH to include indicators to measure patient admission trends and outcomes. The department and MSH have implemented the audit recommendation.

BACKGROUND

The Children, Family, Health and Human Services Interim Committee have been studying specific aspects of the mental health system in Montana. One of the most prominent topics in terms of committee deliberations was how to address managing the MSH census and how community-based mental health services affect the census. As a result, our performance audit examined the overall MSH census and compared the characteristics of private-pay population with the public-pay population at MSH. Our audit objectives were to determine what, if any, differences existed between the private-pay and public-pay populations at MSH and to identify if enhancements could be made regarding information collected and analyzed about the MSH population.

FOLLOW-UP AUDIT FINDINGS

The performance audit report included one multi-part recommendation to the department. The recommendation was directed toward expanding data collected about the population served at MSH in order to gain a better understanding of patient admission trends and outcomes. The following summarizes information relating to follow-up audit work and the implementation status of the recommendation.

Recommendation #1

We recommend the department and Montana State Hospital (MSH) enhance program management at MSH by:

A. Expanding information collected, analyzed, and reported about the population served.

B. Establishing performance measures that measure MSH patient admission trends and outcomes.

Implementation Status – Implemented

The department has implemented this recommendation. The department established an internal working group to identify and address information needs for MSH population characteristics. Department management also developed an information management plan in order to formalize its plan of action and address both information and resource needs. Staff developed a list of standardized definitions to allow for integration of data throughout the facility, identified data fields to be collected, and have begun collecting this additional information. They are also working to address some of the shortcomings with the existing data management system. Lastly, staff expanded the use of management reports regarding the population served in order to better record and disseminate information.

MONTANA STATE HOSPITAL

2008 INFORMATION MANAGEMENT PLAN

Organizational Description: Montana State Hospital (MSH) is a public psychiatric inpatient treatment facility operated by the Montana Department of Public Health and Human Services in Warm Springs, Montana. MSH is licensed as a hospital and also holds a community mental health center license which covers the operation of on campus group homes. MSH is certified for participation in the federal Medicare and Medicaid programs administered by the Center for Medicare and Medicaid Services (CMS).

MSH operates 174 licensed hospital beds, fifteen licensed adult group home beds, and a 20-bed residential care unit (RCU). At the time this plan is written, the average daily census is 210 patients, making MSH the largest hospital in Montana based on census. There are about 700 admissions and 700 discharges annually.

The Hospital has 405 FTE and an annual operating budget of $29M. Funds for operation are appropriated by the Montana Legislature. About $4M to $5M in reimbursement revenue is collected from billing to Medicare, Medicaid, private insurance, individuals, and county governments. The Hospital campus comprises approximately 500 acres and also houses three programs for the Montana Department of Corrections. MSH facilities include four units in the main hospital. The dietary department, housekeeping, and administration are also in the main hospital. The fifth licensed treatment unit is in the Spratt building. There are two group homes located in the housing units. The Warehouse/Commissary, the Heating Plant, and Maintenance Office and the Residential Care Unit are all located in separate buildings with limited computer network access. There are also about fifty-two (52) employee housing units on the Warm Springs Campus which are administered by the state hospital. MSH provides limited maintenance and other support services for the Correctional programs on the campus.

Montana State Hospital, as an agency of the State of Montana is part of a much larger information system network that establishes standards and protocols, allocates resources, and interconnects with other agencies and organizations. Changes in service including installation of software programs, equipment additions, or system expansion needs to be approved by other divisions and departments within state government.

Population Served: Montana State Hospital serves people who require inpatient psychiatric treatment that may extend for several weeks, months, or in some cases, years. Admission is governed by state law with most people admitted under provisions for involuntary treatment, a civil proceeding. Others, however, may be detained on an emergency basis pending commitment procedures, or for evaluation, a lack of fitness, or post-adjudication in a criminal proceeding. All of the people served at Montana State Hospital are adults. They come from communities across the entire state and most require community mental health follow up services after discharge. Many patients also have physical health problems that must be addressed during hospitalization and post-discharge.

Services Provided: MSH provide comprehensive psychiatric assessment and treatment services that include medications, individual and group therapy, educational, vocational, and recreational programs, religious services, and activities to help people develop community living skills. Treatment services are provided in accordance with a comprehensive treatment plan developed for each patient. Specific treatment such as medications and referrals are provided as ordered by physicians and other licensed prescribers. Federal and state regulations establish a number of standards for patient treatment that must be met.

Information Services: Montana State Hospital currently has a complex system for maintaining and retrieving information related to patients and patient care. Patient records are all hard copy paper files that include documents such as treatment plans that are generated electronically. Other information is entered into several different data bases resulting in duplication and high potential for errors. Systems have generally evolved over time to meet various needs. Reporting capabilities have greatly improved over the past ten years, but many challenges remain. Separate electronic data systems in the hospital, division and state government are used for financial information, demographic data, and employee records. Patient information is managed by the Health Information Department. Fiscal information is managed by the Business Office. Licensure Information, Trends, Safety, and Customer satisfaction is managed by the Quality Assurance Department. Other information systems are used by other departments of the Hospital.

One full-time employee of the Addictive and Mental Disorders Division is based at Montana State Hospital. This position is responsible for employee training on use of computer hardware and software, data base management, user management, and to assist with problems that arise. This position is not directly supervised by anyone at the Hospital, however reports to Health Information Director and works cooperatively with staff from all departments. The Health Information Administrative Assistant also works very closely with a Division employee in TIER and Networking. No other employees at MSH have primary responsibility for information systems; all work in this area is done by people with other primary responsibilities in the Health Information Department; or for clinical, business, or support services.

The Hospital purchased a software package called TIER which stands for "Totally Integrated Electronic Record" from Sequest Technologies in 1997. This package is intended to be a complete, customizable electronic medical record specifically designed for behavioral health programs. However, it is very complex and there have been many difficulties in performance and adopting it for use at Montana State Hospital. Today, only a portion of the package is used including applications to track demographic data, diagnosis, patient treatment plans, medication orders, and participation in groups and other treatment activities.

In February 2001, a consultant was brought in to assess what the department needed to implement Tier: List below were some of the findings,

> "While AMDD has a clear vision and organizational strategic plan that supports and promotes it mission, this level of planning has not been carried to the Division's IT Infrastructure and IT support function.

AMDD facilities have not developed an adequate internal implementation plans identifying internal resources required, training and support needs and time lines.

Risk associated with this project such as:

Majority of TIER knowledge held by one staff member at the division level
Inadequate IT staffing at state-operated facilities

AMDD information services unit is under-staffed. The current staffing model only marginally meets the requirements of the division, and in most instances, is staff operates in reactive mode. If AMDD is to realize the benefits of TIER and adequately train and support end-users, additional staff will be required."

The Division's IS function is currently under staffed. It is unlikely that AMDD's current IT staffing model will be able to support the array to tasks require by TIER at an appropriate level. These include1) system design, 2) documentation, 3) electronic forms development, 4) testing 5) training, 6) support, 7) on-going maintenance, 8) IT policy and procedure development and 9) reporting and data analysis functions

Without adequate funding, it will be difficult for AMDD to realize the benefits of any automated System.

Since the 2001, report the facilities have also been using the environmental systems in TIER.

In 2001 the department discontinued their use of the inventory program. Since that time the facilities have tried to find commercial off-the-shelf applications, which results have not been successful, with the system going down and having to spend, thousands of dollars for support. AMDD programmer has been working on the TIER program and hopes to have it implemented by the end of Fiscal Year 2008.

Again we would like to emphasize that the program knowledge is with one person, and we do not have the staff to support this.

The Hospital uses other software programs for other types of information. These include the state's SABHRS system for accounting and tracking financial information; MBARS for the departments Executive Planning Process, Doc Direct, and Doc Analyzer to generate reports. The canteen uses a point of sales program, and Microsoft Access database for performance improvement data, spreadsheets that have been designed in Microsoft Excel, and others that have been developed over time to meet specific needs.

The hospital maintains a large personal computer network that is connected to the larger state system, and several other servers for the paging system, time clocks, TIER. There are about 170 personal computers in use throughout the hospital. There are also several laptop computers that are shared by employees and used primarily for making presentations or taking minutes at meetings. Employees who have offices generally have a computer available to them. Other employees must share computers. For

instance, there are one or two computers at each nursing station on the Hospital's six treatment units. These computers are shared by employees assigned to the unit on a 24/7 basis. Computer log-in for individual employees is required when starting up so employees can access e-mail and personal files. However, for employees who share computers, logging in and out each time a different person needs to access a computer is a time consuming process and consequently, many people don't bother. Even among staff that have computers in their offices, use is very inconsistent because of varying skill levels and confidence in the system. This contributes to inefficiencies and sometimes miscommunications because people do not receive information intended for them. Our campus is a large campus, and several of our buildings, Maintenance, Warehouse, Residential Care Unit, Heating Plant, do not have the wiring to be on the state system. The Maintenance and Warehouse have a wireless system, which is slow, and Funds have not been available to upgrade the wiring for these buildings.

Patient Information Needs: The information needs of a large complex healthcare organization in the early 21st century are many. Information is obtained from many different sources and needs to be accessed by many individuals. Of greatest importance is the clinical information about each patient. Historically, this has been done by maintaining individual medical records for each person served. These files are often very voluminous and contain a wide variety of documents and handwritten entries made by many different staff. Records are maintained for years, taking up a great deal of space. Copies of documents are sent to insurance companies, aftercare providers, attorneys, and other individuals and organizations when requested. While MSH records are very well organized and very complete for individual patients, they do not lend themselves to queries and data reporting. MSH must rely on other databases for this information. Paper records are also sometimes lost, damaged, or misfiled.

Patient information maintained by the hospital is very detailed. Different types of patient information are listed in Table 1. Most, but not all of this information is maintained in the patient's clinical record. Records are maintained in hard copy on patient units, and stored by the Health Information Department when the patient is discharged. People with extended stays or a high number of admissions have hundreds and even thousands of pages of records. Information must be accessed on a 24/7 basis by clinical personnel that include psychiatrists and other physicians, nurses, social workers, therapists, substance abuse counselors, psychiatric technicians, and others. Records are also accessed by reimbursement staff for billing purposes and by advocacy organizations responsible for ensuring patients receive treatment and rights are protected.

Many of the documents listed below could be collected electronically if we had the needed staff, staff training and equipment to do this. The electronic record then would be easily queried for data reporting.

To improve patient care the use of bar coding, palm pilots for physicians and direct care, and improved wiring for campus are all things the hospital needs to add to the total electronic records.

Table 1 – Patient Information

Prior to or at time of Admission	Assessment	Treatment	Evaluation of Treatment Progress and Critical Information	Aftercare
Referral Information	Nursing Assessment	Comprehensive summary of assessment and case formulation	Progress notes	Contacts with community providers
Legal Status; type of commitment	Psychiatric Evaluation	Treatment Plan	Nursing Flow Sheets	Contacts with family
Living Situation	Medical History and Physical Exam	Activity Schedule	Restraint and seclusion orders and reviews	Financial and eligibility status
Financial and Reimbursement Resources	Social History and Assessment	Physician orders	Recommitment reports and petitions	Disability determination
Criminal history and pending charges	Rehabilitation Therapy Assessment	Medication Administration Record	Group attendance	Living arrangements
Veteran Status	Chemical Dependency Assessment		Treatment Plan reviews and updates	Transportation
Medications	Laboratory screening		Changes in personal belongings	Pre-placement visits
Physical Health Status and needs	TB status		Medical consultations	Aftercare services paid for by MSH
Health Status	Coping Plan		Weight change	Discharge prescriptions and medications
Guardianship, Advance Directives, Power of Attorney	Psychology evaluation and testing results		Metabolic syndrome data	Aftercare plan
Demographics, including age, race religion	Diagnosis		Change of status	Discharge summary
Next of kin; family contact information	Involuntary medication		Correspondence	
Personal belongings given to patient and placed into storage	Dietary consultation		Patient self-report information	
Money in possession			AIMS records	
Date and time of admission			Authorization for release of information	
Date and time of court			Incidents	
Patient rights and other information that must be provided to the patient			Restraint and Seclusion	
Photo Identification				
Laboratory Screening				

Prior to or at time of Admission	Assessment	Treatment	Evaluation of Treatment Progress and Critical Information	Aftercare
Unit and room assignment				
Patient rights information				
Medicare/Medicaid information				

Employee Information Needs: Montana State Hospital has over 400 full time employees (FTE). Position classifications are wide ranging and include physicians, psychologists, nurses, therapists, psychiatric technicians, housekeepers, food service technicians, accountants, administrative assistants, painters, drivers, and plumbers. A wide variety of data specific to each employee needs to be maintained. Different types of employee information are listed in Table 2.

Table 2 – Employee Information

Human Resources	Administration, Safety, and Quality Improvement	Staff Development	Medical Clinic	Staffing Office
Job Profile	Physician Credentialing	Orientation Records	Employee health records	Nursing staff scheduling
Position Posting	Incident reports	Training records	Immunization	Unit reports
Application and Bid forms	Worker's Compensation Data			Employee call out lists
Correspondence	Employee identification			Vacations
Performance Evaluations	Travel requests			Unit assignments
Disciplinary Action	Correspondence			
Transactions – job changes – pay changes				
Payroll deduction forms				
Insurance and benefit information				
Licensure and non-physician credentials				
Kudos				
Grievances				

Fiscal Information: With an operating budget of just over $29,000,000 for FY 2008, MSH must maintain a wide range of fiscal information to track not only hospital expenditures, but personal money belonging to patients as well. Detailed cost reports must also be formulated to enable the hospital to collect reimbursement from the federal Medicare and Medicaid programs. The Hospital's accounting systems use software (SABHRS) consistent throughout state government. However, other financial

management systems are maintained using specific software such as the "Kronos" system for time keeping, "TIER" for warehouse/commissary inventory, and "Excel" for a number of other applications. Table 3 lists various types of fiscal information used by the Hospital.

Table 3 – Fiscal Information

Accounting	Cost Reporting	Paid Claims
Purchasing	Revenue	Canteen Revenue
Donations	Payroll	Employee Time - keeping
Leave Accrual	Property inventory	Commissary and Warehouse Inventory
Patient Accounts	Outside medical services and consultations	Billing for support to DOC programs and utilities

Other Information: Other parts of the Hospital require tracking of other information. Some examples are listed in Table 4.

Table 4 – Other Information

Department	Information
Garage and Staffing	Trips, transportation
Garage	Vehicle Maintenance
Laundry/Housekeeping	Cleaning Schedule
Housekeeping/Warehouse/Maintenance/Safety	Hazardous Materials – MSDS
Security	Security Log
Front Desk	Call Log
Front Desk	Visitors Log
Health Information	Patient ID numbers and photographs
Health Information	Admissions, transfers, discharges
Maintenance	Key distribution
Maintenance	Work Requests
Maintenance	Preventative Maintenance
Canteen	Inventory and orders
Administration	Hearings Schedule
Administration	Recommitment due date and filing status
Administration	Televideo Use Schedule
Quality Improvement	Patient Grievances
Quality Improvement	Incident Reports
Quality Improvement	Performance Improvement Data
Quality Improvement	Admission Data
Dietary	Menus and Special Diets
Library	Article Requests and Circulation Tracking
Health Information	Requests for information
Business Office	Telephones and Communication

Montana State Hospital Information Needs: As indicated by the wide range of information needed by different departments of the Hospital, Montana State Hospital is a very complex organization. Information needed by one department often overlaps with data in another department. Many different people need to access information. And records must be maintained in a manner that ensures information is accurate, up-to-date and readily retrievable. Information management objectives, specific to Montana State Hospital include:

1. Timely and easy access to complete information throughout the organization.
2. Data accuracy.

3. Data security
4. Data integration
5. Effective organization of data including well defined descriptions of how data is stored, accesses, and disseminated
6. Improved use of data for clinical and organizational management
7. Increased productivity and efficiency

These objectives cannot be met without redesign of existing systems. This will also take increased resources. The redesign and reengineering of the Hospital's information systems must be made a priority. Hospital staff will need to be involved, but an outside, experienced perspective is also important. The Hospital would like have an ongoing consultation from an individual or organization experienced in healthcare technology and information management. The purpose would be to develop and oversee implantation of a comprehensive plan to better manage data and critical information consistent with the objectives listed above. The consultant should identify resources needed and help the organization establish priorities. The Hospital also needs to add staff that would have information management and making effective use of technology as their primary responsibility.

New Positions Needed:

Supervisor of Technology Services – Responsibilities for overall implementation of the Hospital's technology systems including computer networks, software, phones, radio communications, and televideo. Must have formal academic training in managing healthcare information systems and experience in installing new applications for healthcare settings

Application Designer – This position will adapt software applications for specific use at Montana State Hospital. The primary responsibility would be to expand use of "TIER" for clinical record keeping. This position would also have responsibility for better integrating systems and reducing duplication and overlap between existing applications. Must have formal academic training in information technology and computer programming. Experience in a healthcare setting and ability to communicate effectively with treatment professionals would be very beneficial.

Support and Training Specialist – The Hospital is in need of an additional Support and Training Specialist to work directly with staff to assist them with using information systems and solving problems that arise. Must have excellent communication skills and be innovative and creative.

Data Entry and Reporting Specialist – The Hospital needs a position to oversee data entry processes to ensure efficiency and accuracy. This position would also be responsible for using data to generate clinical and management reports. Experience doing this work in a healthcare setting would be important. The goal would be to make data entry processes efficient and accurate and to make use of data to aid clinical staff in patient care and provide decision support data to managers.

Equipment Needs:

Equipment Needs the hospital is looking at to help us reach our objectives are as followed:

- Additional Wiring for Campus Building Approx. cost $100,000
- Automated Medication Management System for pharmacy and medication rooms Approx. cost $1,000,000
- Palm pilots or similar equipment to eliminate staff writing hard copies and having to be transferred into the electronic record.
- Scanners to put old records into electronic format

These positions along with ongoing consultation would help ensure the best use of resources for information management and would lead to improved patient care. While this would be a substantial investment, it would create greater efficiency and reduce existing problems caused by outdated systems and unreliable information. It is essential to moving the hospital forward and meeting current standards for provision of patient care.

Montana State Hospital objectives for 2009 biennium are:

- To implement additional portions of TIER to include additional components of patient clinical records and supply inventory management.
- To implement automated staff scheduling systems using software compatible with the KRONOS time-keeping system
- Bar Coding for Patient information such Pharmacy, Personal Effects
- Scan Old records to electronic format
- Assess the external and internal information needs of the hospital as stated in the purpose. (ongoing)
- Educate staff in principals of information management to include training of staff to the computer systems, data collection and reporting mechanisms. (ongoing)
- Develop list of standardized definitions to allow for integration of data throughout the facility. ongoing)
- Develop flowchart showing integration of information.
- Submit proposals for system improvements to the Montana Legislature

These objectives will be prioritized and accomplished as resources allow.